

Reverse Voltage 5.0~440 V
1500 Watt Peak Pulse Power

Features

- 1500W peak pulse power capability at 10/1000μs waveform, repetition rate (duty cycles):0.01%
- Low profile package
- Glass Passivated Junction
- Excellent clamping capability
- Fast response time: typically less than 1.0ps from 0V to BV min
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC

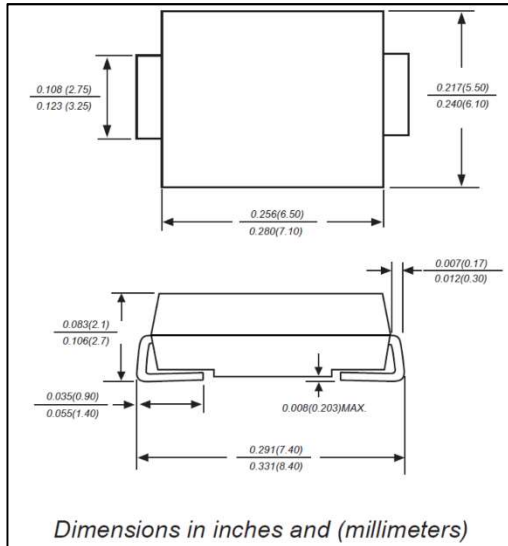
Typical Applications

TVS devices are ideal for the protection of I/O Interfaces, Vcc bus and other vulnerable circuits used in Telecom, Computer, Industrial and Consumer electronic applications.

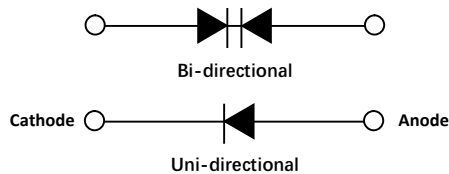
Mechanical Data

- Case: SMC Plastic Package
- Polarity: Indicated by cathode band

Package Outline SMC (DO-214AB)



Functional Diagram



Maximum Ratings and Thermal Characteristics

Ratings at TA=25°C (unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at TA=25°C by 10/1000μs Waveform (Fig.1) (Note 1), (Note 2), (Note 5)	P _{PPM}	1500	W
Steady State Power Dissipation @ TL = 75°C	P _D	6.5	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)	I _{FSM}	200	A
Maximum Instantaneous Forward Voltage at 5.0A for Unidirectional Only (Note 4)	V _F	1.5	V
Storage temperature range	T _S	-55 ~ 175	°C
Operating Junction temperature range	T _J	-55 ~ 150	°C
Thermal Resistance (Note2)	R _{thJL}	15	°C/W

Note: 1. Non-repetitive current pulse, per Fig. 4 and derated above T_J (initial) = 25°C per Fig. 3.

2. Mounted on copper pad area of 0.31x0.31" (8.0 x 8.0mm) to each terminal.

3. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only.

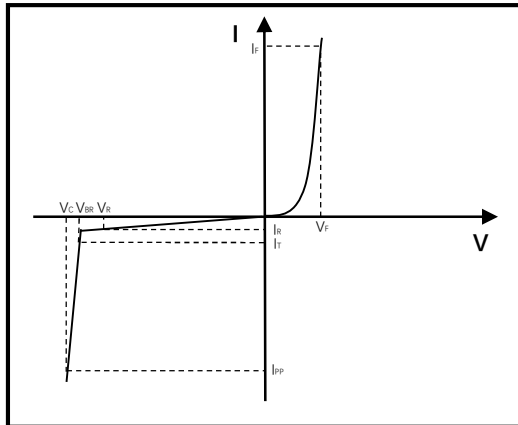
4. V_F < 1.5V for single die parts.

Electrical characteristics

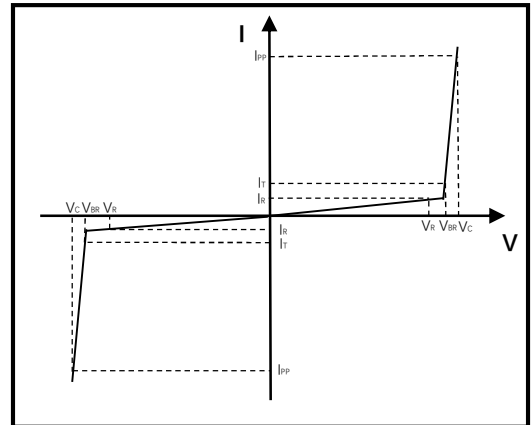
Ratings at TA=25℃ (unless otherwise specified)

Part Number (Uni)	Part Number (Bi)	Reverse Stand Off Voltage VR (Volts)	Breakdown Voltage VBR (Volts) @ IT		Test Current IT (mA)	Maximum Clamping Voltage VC @ Ipp (V)	Maximum Peak Pulse Current Ipp (A)	Maximum Reverse Leakage IR@ VR (μA)
			Max.	Min.				
SMCJ5.0A	SMCJ5.0CA	5	6.4	7	10	9.2	163	800
SMCJ6.0A	SMCJ6.0CA	6	6.67	7.37	10	10.3	145.7	800
SMCJ6.5A	SMCJ6.5CA	6.5	7.22	7.98	10	11.2	134	500
SMCJ7.0A	SMCJ7.0CA	7	7.78	8.6	10	12	125	200
SMCJ7.5A	SMCJ7.5CA	7.5	8.33	9.21	1	12.9	116.3	100
SMCJ8.0A	SMCJ8.0CA	8	8.89	9.83	1	13.6	110.3	50
SMCJ8.5A	SMCJ8.5CA	8.5	9.44	10.4	1	14.4	104.2	20
SMCJ9.0A	SMCJ9.0CA	9	10	11.1	1	15.4	97.4	10
SMCJ10A	SMCJ10CA	10	11.1	12.3	1	17	88.3	5
SMCJ11A	SMCJ11CA	11	12.2	13.5	1	18.2	82.5	1
SMCJ12A	SMCJ12CA	12	13.3	14.7	1	19.9	75.4	1
SMCJ13A	SMCJ13CA	13	14.4	15.9	1	21.5	69.8	1
SMCJ14A	SMCJ14CA	14	15.6	17.2	1	23.2	64.7	1
SMCJ15A	SMCJ15CA	15	16.7	18.5	1	24.4	61.5	5
SMCJ16A	SMCJ16CA	16	17.8	19.7	1	26	57.7	5
SMCJ17A	SMCJ17CA	17	18.9	20.9	1	27.6	54.4	5
SMCJ18A	SMCJ18CA	18	20	22.1	1	29.2	51.4	5
SMCJ20A	SMCJ20CA	20	22.2	24.5	1	32.4	46.3	5
SMCJ22A	SMCJ22CA	22	24.4	26.9	1	35.5	42.3	5
SMCJ24A	SMCJ24CA	24	26.7	29.5	1	38.9	38.6	5
SMCJ26A	SMCJ26CA	26	28.9	31.9	1	42.1	35.7	5
SMCJ28A	SMCJ28CA	28	31.1	34.4	1	45.4	33.1	5
SMCJ30A	SMCJ30CA	30	33.3	36.8	1	48.4	31	5
SMCJ33A	SMCJ33CA	33	36.7	40.6	1	53.3	28.2	5
SMCJ36A	SMCJ36CA	36	40	44.2	1	58.1	25.9	5
SMCJ40A	SMCJ40CA	40	44.4	49.1	1	64.5	23.3	5
SMCJ43A	SMCJ43CA	43	47.8	52.8	1	69.4	21.7	5
SMCJ45A	SMCJ45CA	45	50	55.3	1	72.7	20.6	5
SMCJ48A	SMCJ48CA	48	53.3	58.9	1	77.4	19.4	5
SMCJ51A	SMCJ51CA	51	56.7	62.7	1	82.4	18.2	5
SMCJ54A	SMCJ54CA	54	60	66.3	1	87.1	17.3	5
SMCJ58A	SMCJ58CA	58	64.4	71.2	1	93.6	16.1	5
SMCJ60A	SMCJ60CA	60	66.7	73.7	1	96.8	15.5	5
SMCJ64A	SMCJ64CA	64	71.1	78.6	1	103	14.6	5
SMCJ70A	SMCJ70CA	70	77.8	86	1	113	13.3	5
SMCJ75A	SMCJ75CA	75	83.3	92.1	1	121	12.4	5
SMCJ78A	SMCJ78CA	78	86.7	95.8	1	126	11.9	5
SMCJ85A	SMCJ85CA	85	94.4	104	1	137	11	5
SMCJ90A	SMCJ90CA	90	100	111	1	146	10.3	5
SMCJ100A	SMCJ100CA	100	111	123	1	162	9.3	5
SMCJ110A	SMCJ110CA	110	122	135	1	177	8.5	5
SMCJ120A	SMCJ120CA	120	133	147	1	193	7.8	5
SMCJ130A	SMCJ130CA	130	144	159	1	209	7.2	5
SMCJ150A	SMCJ150CA	150	167	185	1	243	6.2	5
SMCJ160A	SMCJ160CA	160	178	197	1	259	5.8	5
SMCJ170A	SMCJ170CA	170	189	209	1	275	5.5	5
SMCJ180A	SMCJ180CA	180	201	222	1	292	5.1	5
SMCJ200A	SMCJ200CA	200	224	247	1	324	4.6	5
SMCJ220A	SMCJ220CA	220	246	272	1	356	4.2	5
SMCJ250A	SMCJ250CA	250	279	309	1	405	3.7	5
SMCJ300A	SMCJ300CA	300	335	371	1	486	3.1	5
SMCJ350A	SMCJ350CA	350	391	432	1	567	2.6	5
SMCJ400A	SMCJ400CA	400	447	494	1	648	2.3	5
SMCJ440A	SMCJ440CA	440	492	543	1	713	2.1	5

I-V Curve Characteristics



Uni-directional



Bi-directional

- VR** Stand-off Voltage -- Maximum voltage that can be applied to the TVS without operation
VBR Breakdown Voltage -- Maximum voltage that flows through the TVS at a specified test current (I_T)
VC Clamping Voltage -- Peak voltage measured across the TVS at a specified I_{ppm} (peak impulse current)
IR Reverse Leakage Current -- Current measured at VR
VF Forward Voltage Drop for Uni-directional

Characteristics Curves

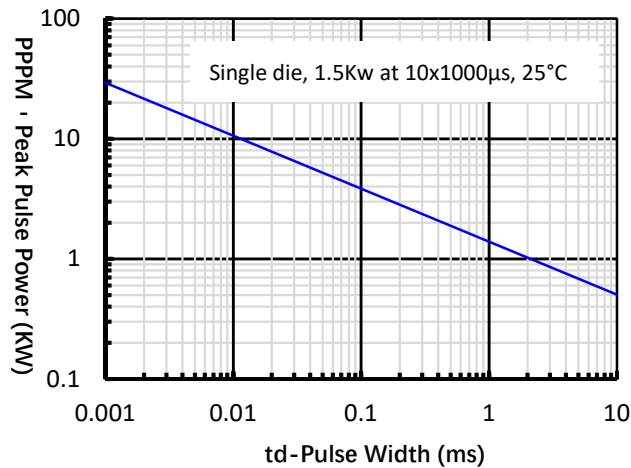


Figure 1 - Peak Pulse Power Rating

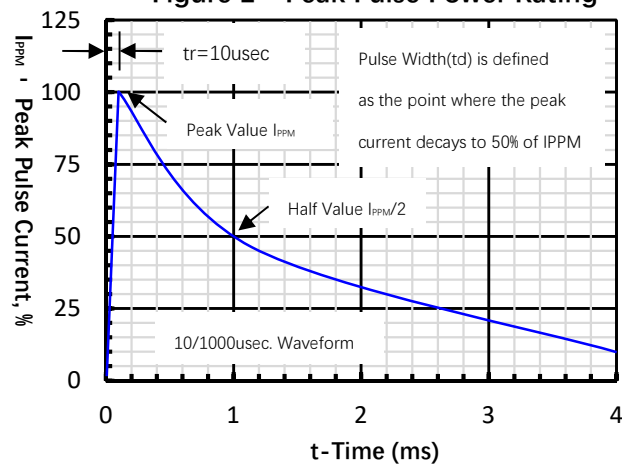


Figure 3 - Pulse Waveform

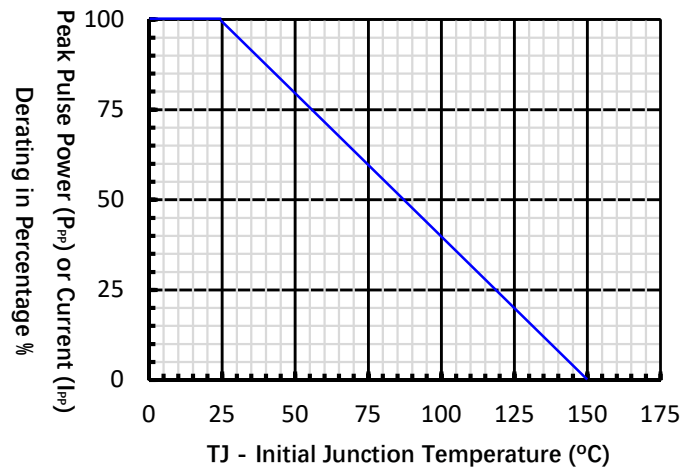


Figure 2 - Peak Pulse Power Derating Curve

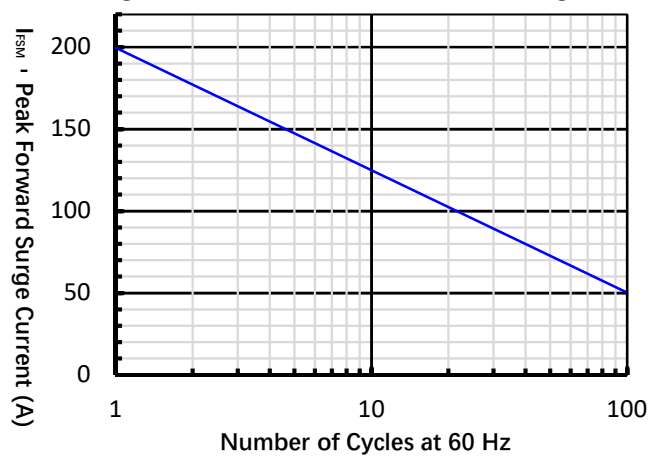


Figure 4 - Non-Repetitive I_{FSM}

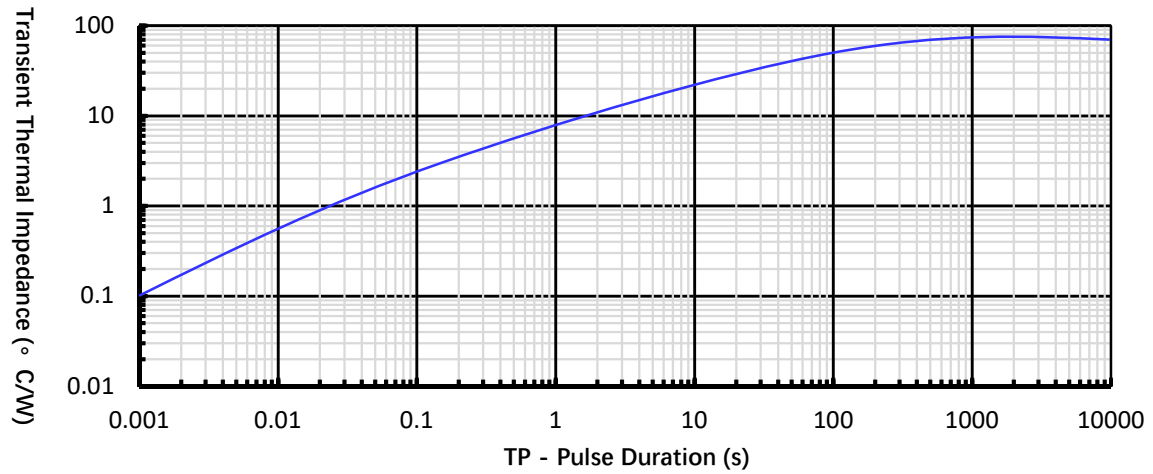


Figure 5 - Typical Transient Thermal Impedance

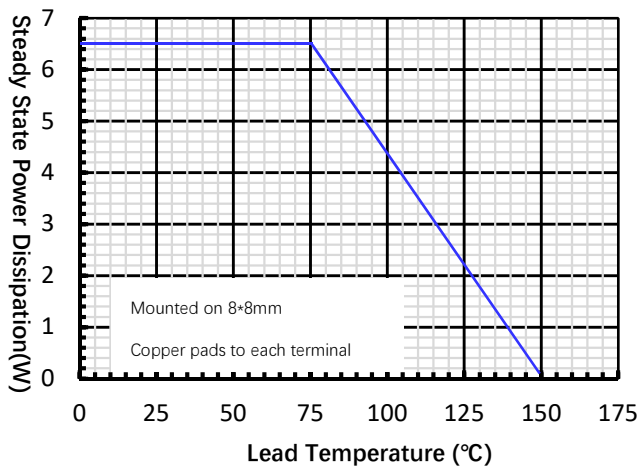


Figure 6 - Steady State Power Derating Curve

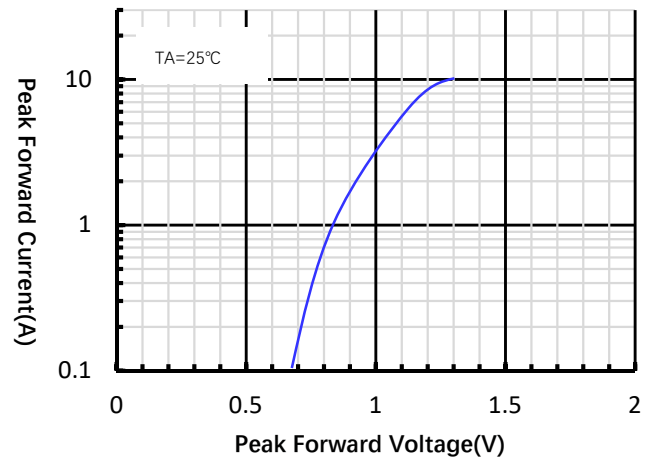


Figure 7 -IF vs VF (Typical Values)